

New research shows peer drug use may increase an individual's genetic tendency to use drugs

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The nature-nurture debate is usually about how much of something is due to our genes and how much is caused by our environment. New research just published in the academic journal *Addiction* shows that the case is more interesting for young women who smoke, drink, or use drugs, for two related reasons. First, a young woman with a genetic predisposition to substance use is also predisposed to choose friends who smoke, drink, or use drugs, thereby altering her environment in a way that encourages substance use. Second, a young woman's exposure to substance-using friends not only changes her environment but also increases her genetic inclination to use these drugs regularly, thereby raising even higher her already increased likelihood of substance use.

Using a sample of over 2,000 female twins, researchers from Washington University in St. Louis looked for links between two types of data: 1) women in the sample who regularly used tobacco, alcohol, or drugs and 2) women whose friends were involved in regular substance use. The links they found showed that genetic vulnerability to regular use of alcohol, [cigarettes](#) and [cannabis](#) is exacerbated by exposure to friends who use alcohol, cigarettes and drugs.

It is well known that [adolescents](#) often select peers who engage in behaviors similar to their own. But this study showed that peer selection has a genetic basis whereby one's [genetic predisposition](#) to regular substance use is correlated with the likelihood of choosing friends who

also use psychoactive substances. The [genetic factors](#) that influence our own likelihood of using drugs thus also modify our likelihood of associating with friends who do the same.

However, exposure to these drug-using peers has a second, important influence on our own liability to use drugs. The study found that heritable influences on an individual's own regular substance use increased as they affiliated with more drug-using peers - in other words, affiliations with substance-using peers enhances the role that heritable factors play in our own regular substance use. Put simply, increasing affiliations with drug-using peers is correlated with a more 'genetic' form of regular substance use.

According to lead author Dr. Arpana Agrawal, "Nature and nurture don't just combine to produce a woman who smokes, drinks, or uses drugs - nurture can also increase the effect of nature."

More information: Agrawal A., Balasubramanian S., Smith E., Madden P., Bucholz K., Heath A., and Lynskey M. Peer substance involvement modifies genetic influences on regular substance involvement in young women. *Addiction* 2010; 105: [DOI: 10.1111/j.1360-0443.2010.02993.x](#)

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